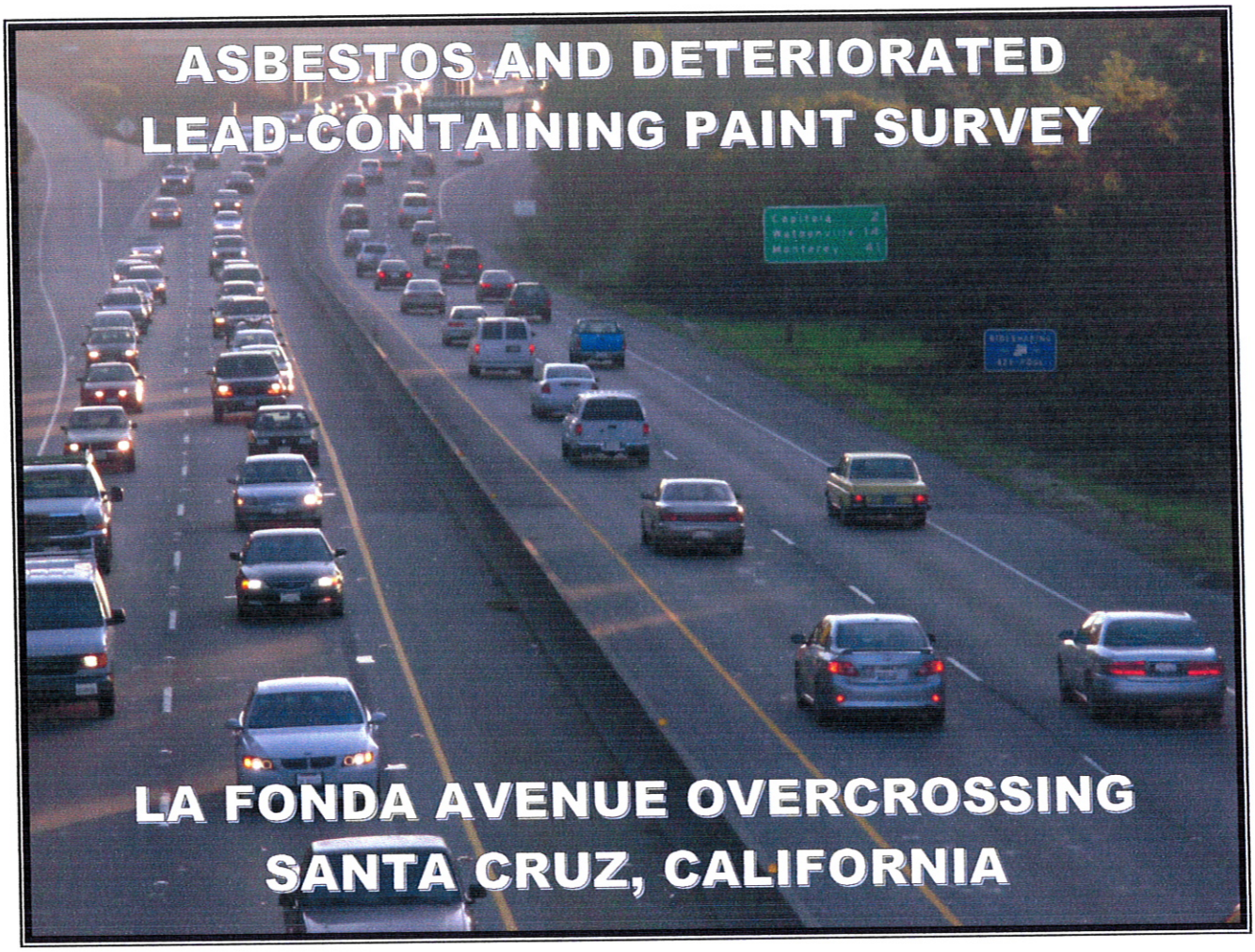
ASBESTOS AND DETERIORATED LEAD-CONTAINING PAINT SURVEY



LA FONDA AVENUE OVERCROSSING
SANTA CRUZ, CALIFORNIA

PREPARED FOR:
NOLTE ASSOCIATES
1731 NORTH FIRST STREET, SUITE A
SAN JOSE, CALIFORNIA 95112

Caltrans

PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA

GEOCON

GEOCON PROJECT NO. E8461-06-01
CALTRANS EA 05-0F6500

MAY 2009

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. E8461-06-01
May 26, 2009

Ms. Charmaine Zamora
Nolte Associates
1731 North First Street, Suite A
San Jose, California 95112

Subject: ASBESTOS AND DETERIORATED LEAD-CONTAINING PAINT SURVEY
LA FONDA AVENUE OVERCROSSING (BRIDGE 36-0018)
SANTA CRUZ, CALIFORNIA

Dear Ms. Zamora:

We have performed an asbestos and deteriorated lead-containing paint (LCP) survey of the subject bridge in Santa Cruz, California. The scope of services provided by Geocon included surveying the bridge for suspect asbestos-containing materials and deteriorated LCP, collecting bulk samples, and submitting the samples to a laboratory for analysis.

The accompanying report summarizes the services performed and the results of laboratory testing.

The contents of this report reflect the views of Geocon, who are responsible for the facts and accuracy of the data presented herein. This report does not constitute a standard, specification, or regulation.

If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact me at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

David Watts, CAC
Senior Project Scientist

DAW:daw

(5) Addressee

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ASBESTOS AND DETERIORATED LEAD-CONTAINING PAINT SURVEY REPORT

1.0 INTRODUCTION

1.1 Site Description

The project consists of the La Fonda Avenue Overcrossing (Bridge 36-0018) on Highway 1 in Santa Cruz, California (the project location). The approximate project location is depicted on the Vicinity Map, Figure 1, and Site Plan, Figure 2.

1.2 Objective

Our objective was to assess the potential presence and quantity of asbestos and deteriorated (peeling/flaking) lead-containing paint (LCP) at the project location prior to planned demolition activities. The information obtained from this investigation will be used by Nolte Associates for waste profiling, determining California Occupational Safety and Health Administration (Cal/OSHA) applicability, and coordinating asbestos disturbance activities.

2.0 BACKGROUND

2.1 Asbestos

The *Code of Federal Regulations (CFR),* 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Federal Occupational Safety and Health Administration (FED OSHA) classify asbestos-containing material (ACM) as any material or product that contains *greater than* 1% asbestos. Nonfriable ACM is classified by NESHAP as either Category I or Category II material defined as follows:

- **Category I** – asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products.
- **Category II** – all remaining types of nonfriable asbestos-containing material not included in Category I that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated asbestos-containing material (RACM), a hazardous waste when friable, is classified as any manufactured material that contains *greater than* 1% asbestos by dry weight *and* is:

- Friable (can be crumbled, pulverized, or reduced to powder by hand pressure); or
- Category I material that has become friable; or
- Category I material that has been subjected to sanding grinding, cutting or abrading; or
- Category II nonfriable material that has a high probability of becoming crumbled, pulverized, or reduced to a powder during demolition or renovation activities.

Activities that disturb materials containing *any* amount of asbestos are subject to certain requirements of the Cal/OSHA asbestos standard contained in Title 8, CCR Section 1529. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of a material exceeds 1%, virtually all requirements of the standard become effective.

Materials containing more than 1% asbestos are also subject to NESHAP regulations (40 CFR Part 61, Subpart M). RACM (friable ACM and nonfriable ACM that will become friable during demolition operations) must be removed from structures prior to demolition. Certain nonfriable ACM and materials containing 1% or less asbestos may remain in structures during demolition; however, there are waste handling/disposal issues and Cal/OSHA work requirements that may make it cost ineffective to do so. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

With respect to potential worker exposure, notification, and registration requirements, Cal/OSHA defines asbestos-containing construction material (ACCM) as construction material that contains more than 0.1% asbestos (Title 8, CCR 341.6).

2.2 Lead Paint

Construction activities (including demolition) that disturb materials or paints containing *any* amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR, Section 1532.1. Deteriorated paint is defined by Title 17, CCR, Division 1, Chapter 8, §35022 as a surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separating from a component. Demolition of a deteriorated LCP component would require waste characterization and appropriate disposal. Intact LCP on a component is currently accepted by most landfill facilities; however, contractors are responsible for segregating and characterizing waste streams prior to disposal.

For a solid waste containing lead, the waste is classified as California hazardous when: 1) the total lead content equals or exceeds the respective Total Threshold Limit Concentration (TTLC) of 1,000 milligrams per kilogram (mg/kg); or 2) the soluble lead content equals or exceeds the respective Soluble Threshold Limit Concentration (STLC) of 5 milligrams per liter (mg/l) based on the standard Waste Extraction Test (WET). A waste has the potential for exceeding the lead STLC when the waste's total lead content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when total lead is detected at a concentration greater than or equal to 50 mg/kg, and assuming that 100 percent of the total lead is soluble, soluble lead analysis is required. Lead-containing waste is classified as "Resource, Conservation, and Recovery Act" (RCRA) hazardous, or Federal hazardous, when the soluble lead content equals or exceeds the Federal regulatory level of 5 mg/l based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability; however, for the purposes of this investigation, toxicity (i.e., lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste.

Potential hazards exist to workers who remove or cut through LCP coatings during demolition. Dust containing hazardous concentrations of lead may be generated during scraping or cutting materials coated with lead-containing paint. Torching of these materials may produce lead oxide fumes. Therefore, air monitoring and/or respiratory protection may be required during the demolition of materials coated with LCP. Guidelines regarding regulatory provisions for construction work where workers may be exposed to lead are presented in Title 8, CCR, Section 1532.1.

2.3 Architectural Drawings and Previous Survey Activities

Architectural drawings and previous survey reports for the project were not available for our review.

3.0 SCOPE OF SERVICES

Mr. David Watts, a California-Certified Asbestos Consultant (CAC), certification No. 98-2404 (expiration September 16, 2009), and Certified Lead Paint Inspector/Assessor and Project Monitor with the California Department of Public Health Services (DPH), certification numbers I-1734 and M-1734 (expiration December 4, 2009), performed the asbestos and LCP survey at the project location on December 9, 2008.

3.1 Asbestos

Suspect ACM were grouped into homogeneous areas with representative samples randomly collected from each. In addition, each potential ACM was evaluated for friability. A total of four bulk asbestos samples of suspect materials were collected.

Our procedures for inspection and sampling are discussed below:

- Collected bulk asbestos samples after first wetting friable material with a light mist of water. The samples were then cut from the substrate and transferred to a labeled container. Note that when multiple samples were collected, the sampling locations were distributed throughout the homogeneous area (spaces where the material was observed).
- Relinquished bulk asbestos samples to EMSL Analytical, Inc., a California-licensed and Caltrans-approved subcontractor, for asbestos analysis in accordance with United States Environmental Protection Agency (EPA) Test Method 600/R-93/116 using polarized light microscopy (PLM) under chain-of-custody protocol. EMSL Analytical, Inc. is a laboratory accredited by the National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program (NIST-NVLAP) for bulk asbestos fiber analysis. The laboratory analyses were requested on a 5-day turn-around-time.

Sample identification numbers, material descriptions, approximate quantities, friability assessments, and photo references are summarized on the attached table. Approximate sample locations are presented on Figure 2. Materials represented by the samples collected are shown in the attached photographs.

3.2 Lead Paint

We observed no deteriorated LCP during the survey. Consequently, we collected no deteriorated LCP samples.

4.0 INVESTIGATIVE RESULTS

No asbestos fibers were observed in samples of suspect materials collected at the project location. A summary of the analytical laboratory test results for asbestos is presented on the attached table.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Asbestos

Since no asbestos was detected, the Cal/OSHA asbestos standard does not apply for activities disturbing suspect materials represented by samples collected during our survey. In addition, suspect materials represented by samples collected during our survey would not be considered a California hazardous waste based on asbestos content.

In accordance with Monterey Bay Unified Air Pollution Control District (MBUAPCD) Rule 424, written notification to the MBUAPCD is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not).

5.2 Lead Paint

We identified no deteriorated paints at the project location during our survey. However, we recommend that all paints at the project location be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during any future maintenance, renovation, and demolition activities. This recommendation is based on the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some industrial paints.

6.0 REPORT LIMITATIONS

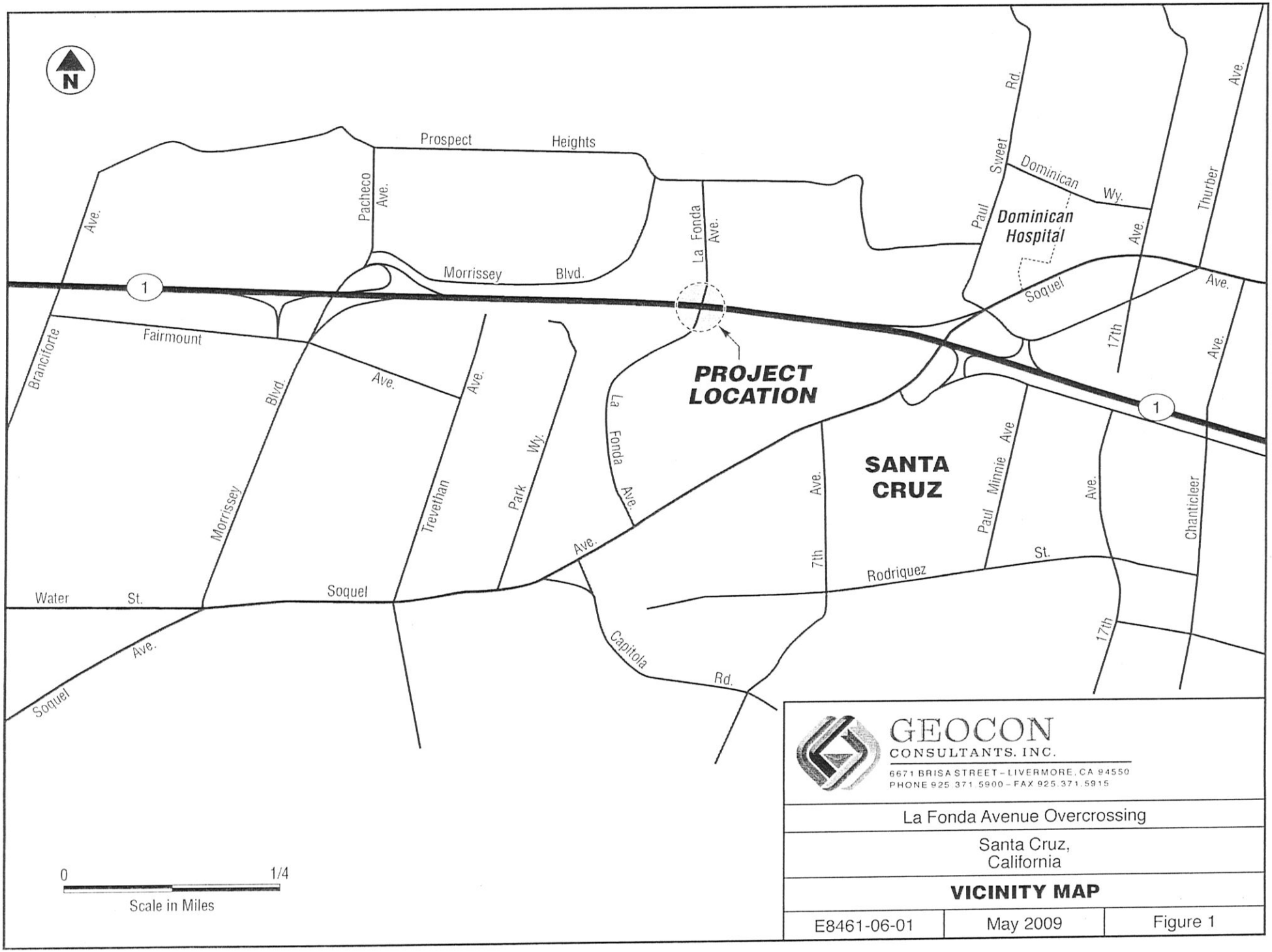
This report has been prepared exclusively for Nolte Associates. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

The asbestos and deteriorated LCP survey was conducted in conformance with generally accepted standards of practice for identifying and evaluating asbestos and LCP in structures. The survey addressed only the structure identified in Section 1.1. Due to the nature of surveys, asbestos and LCP use, and laboratory analytical limitations, some asbestos or deteriorated LCP in the structure may not have been identified. Spaces such as wall cavities, crawlspaces, voids, and pipe chases, may have been concealed to our investigator. Previous renovation work may have concealed or covered spaces or materials, or may have partially demolished materials and left debris in inaccessible areas. Additionally, renovation activities may have partially replaced asbestos with indistinguishable non-asbestos. Asbestos and/or LCP may exist in areas not accessible or sampled in conjunction with our scope of services.

During renovation or demolition operations, suspect materials may be uncovered which are different from those accessible for sampling during this assessment. Personnel in charge of renovation/demolition should be alerted to note materials uncovered during such activities that differ substantially from those included in this or previous assessment reports. If additional suspect materials are found, they should be treated as ACM until/unless sampling and analysis indicate otherwise.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence, or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. This report does not constitute a standard, specification, or regulation.



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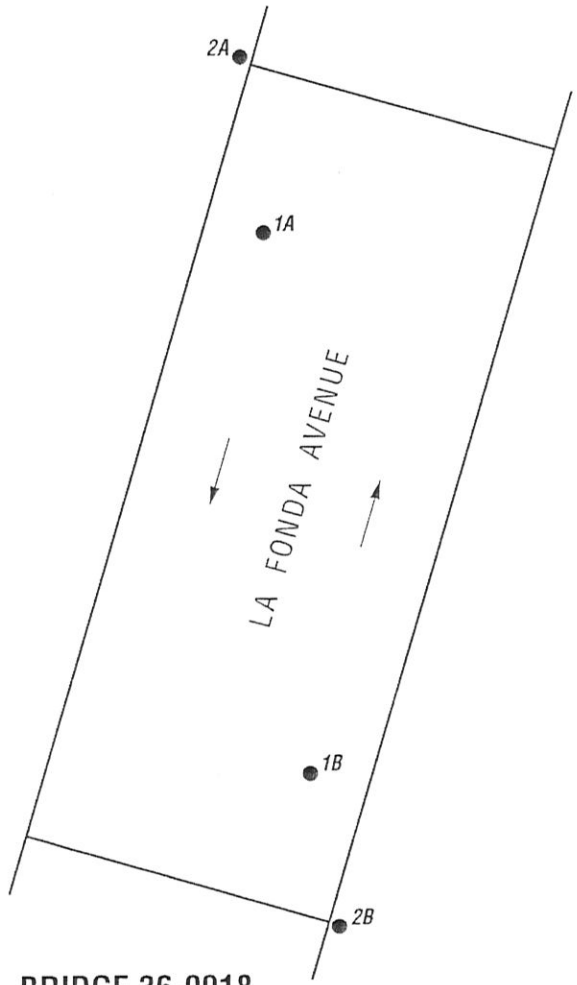
La Fonda Avenue Overcrossing

Santa Cruz,
California

VICINITY MAP

E8461-06-01	May 2009	Figure 1



BRIDGE 36-0018

LEGEND:

- Approximate Asbestos Sample Location

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La Fonda Avenue Overcrossing

Santa Cruz,
California

SITE PLAN

E8461-06-01	May 2009	Figure 2

Photo 1 – La Fonda Avenue Overcrossing (Bridge 36-0018)

Photo 2 – Deck joint seal (non-suspect)

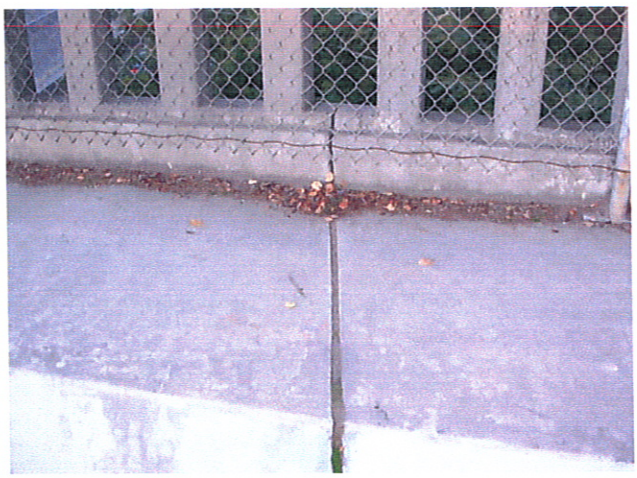

Photo 3 – Span joint fill material

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PHOTOGRAPHS 1, 2, & 3		
La Fonda Avenue Overcrossing Santa Cruz, California		
E8461-06-01		May 2009

Photo 4 – Span

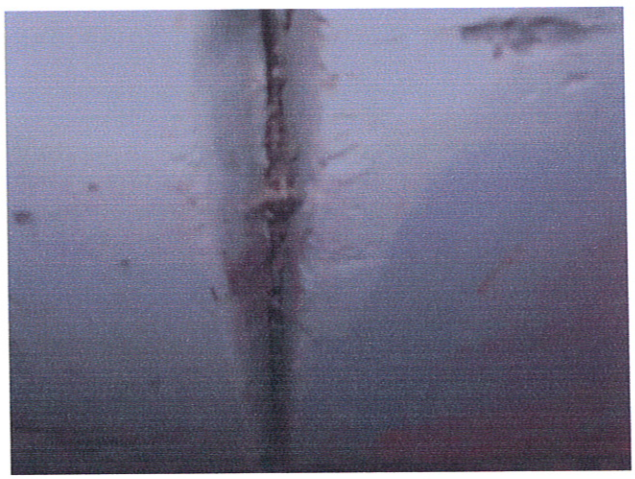

Photo 5 – Abutment joint fill material

Photo 6 – Abutment

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PHOTOGRAPHS 4, 5, & 6		
La Fonda Avenue Overcrossing Santa Cruz, California		
E8461-06-01		May 2009

TABLE 1
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - ASBESTOS
LA FONDA AVENUE OVERCROSSING IN SANTA CRUZ, CALIFORNIA

Polarized Light Microscopy (PLM) - EPA Test Method 600/R-93/116

Sample ID	Description of Suspect Material	Approximate Quantity	Friable	Site Photo	Asbestos Content
1A	Expansion joint fill material (span)	NA	NA	3	ND
1B					ND
2A	Expansion joint fill material (abutments)	NA	NA	5	ND
2B					ND

Notes:
NA = Not applicable
ND = No asbestos fibers detected

APPENDIX A

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Dave Watts**
Geocon Consultants
6671 Brisa Street
Livermore, CA 94550

Fax: (925) 371-5915 Phone: (925) 371-5900
Project: **E8461-06-01, La Fonda Ave., Bridge**

Customer ID: GECN21
Customer PO: E8461-06-01
Received: 12/11/08 9:30 AM
EMSL Order: 090809664

EMSL Proj:
Analysis Date: 12/17/2008
Report Date: 12/19/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
1A, EJM *090809664-0001*	Bridge span	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1B, EJM *090809664-0002*	Bridge span	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
2A, EJM *090809664-0003*	Bridge abutments	Black Non-Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (other)	None Detected
2B, EJM *090809664-0004*	Bridge abutments	Black Non-Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (other)	None Detected

Report revised. Sbrewer 12/19/08.

Analyst(s)

Jason Mcgriff (4)

Baojia Ke, Laboratory Manager
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

NVLAP Lab Code 101048-3

THIS IS THE LAST PAGE OF THE REPORT.

EMSL – San Leandro ◆ 2235 Polvorosa Ave, Suite 230, San Leandro, CA 94577

(888) 455-3675 ◆ Phone (510) 895-3675 ◆ Fax (510) 895-3680 ◆ sanleandrolab@emsl.com

EMSL Rep: D. KOCITER
Company: GEOCON
Contact: D. WATTS
Address: 6671 BRISA ST
City & State: LIVERMORE CA Zip 94550
Phone: (925) 371-5900
☐ Email Results
Project Name or Number: E8461-06-01 (LA FONDA AVE BRIDGE)

Third Party Billing **requires written authorization from third party*
EMSL-Bill to:
Contact:
Address:
City & State: Zip
Fax:
☐ Fax results
Purchase Order Number:

TURNAROUND TIME

☐ 3 Hours	☐ 6 Hours	☐ 24 Hours	☐ 48 Hours	☐ 72 Hours	☒ 5 Days	☐ 10 Days

SAMPLE MATRIX

☐ Air	☒ Bulk	☐ Soil	☐ Wipe	☐ Micro-Vac	☐ Drinking Water	☐ Wastewater	☐ Chips	☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/ Time Weighted Average

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☒ EPA 600/R-93/116
- ☐ + Add Gravimetric Reduction (EPA NOB)
- PLM CARB 435 Level: ☐ A (0.25%) ☐ B (0.1%)
- ☐ NIOSH 9002
- ☐ EPA Point Count (400 Points)
- ☐ + Add Gravimetric Reduction (EPA NOB)
- ☐ EPA Point Count (1,000 Points)
- ☐ + Add Gravimetric Reduction (EPA NOB)
- ☐ Standard Addition Point Count

SOILS
- PLM CARB 435 Level: ☐ A (0.25%) ☐ B (0.1%)
- TEM CARB 435 Level: ☐ B (0.1%) ☐ C (0.01%) ☐ D (0.001%) ☐ E (0.0005%) ☐ F (0.0001%)
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)
- EPA Protocol ☐ Qualitative ☐ Quantitative

TEM BULK
- ☐ TEM EPA NOB, EPA 600/R-93/116 Section 2.5.5.1 (TEM % by VAE)
- ☐ Chatfield SOP-1988-02
- ☐ TEM EPA 600/R-93/116 Section 2.5.5.2 (TEM % by Mass)

TEM MICROVAC
- ☐ ASTM D 5755 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480 (Quantitative)

TEM WATER
- ☐ EPA 100.2 (≥ 10 microns)
- ☐ Modified EPA 100.2 (≥ 0.5 microns)

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420

☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS
- ☐ Particle Identification
- ☐ Full Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterization
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS
- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ NIOSH 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Relinquished:	[signature]	Date:	10 DEC 2008	Time:	11 00
Received:	USPS	Date:	10 DEC 2008	Time:	11 00
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

EMSL ANALYTICAL, INC

EMSL – San Leandro ◆ 2235 Polvorosa Ave, Suite 230, San Leandro, CA 94577

	SAMPLE NUMBER	SAMPLE DESCRIPTION	LOCATION	VOLUME Air (L) Area (Inches sq.)
1	1A	EJM – SPAN	BRIDGE SPAN	NA
2	1B	"	"	"
3	2A	– ABUTMENT	ABUTMENTS	"
4	2B	– "	"	"
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Client Sample # (S) _____ - _____ TOTAL SAMPLE # 4

Relinquished:		Date:		Time:	
Received:	[signature]	Date:	12/11/08	Time:	9:30 am
Relinquished:		Date:		Time:	
Received:		Date:		Time:	